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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,312

11/26/2003

Yudong Zhu

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8839

7590

12/20/2004

Ziolkowski Patent Solutions Group, LLC
14135 North Cedarburg Road
Mequon, WI 53097

EXAMINER

SHRIVASTAV, BRIJ B


ART UNIT

PAPER NUMBER

2859

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/723,312	Applicant(s) ZHU, YUDONG	
	Examiner Brij B Shrivastav	Art Unit 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,8 and 10-24 is/are rejected.
- 7) ☒ Claim(s) 3-6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 2, 7-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Katscher et al (US 6,828,790).

As regards to claim 1, Katscher et al teach a method of MR imaging, including the steps of determining a desired RF examination profile, and independently driving each transmit coil of a transmit coil array such that a collective excitation generated by the transmit coil array substantially matches the desired RF excitation profile (figure 1-3, numerals 13, 16; column 3, lines 11-54 columns 4 and 5, lines 1-67 and 1-55; column 7, lines 44-54)

As regards to claim 7, Katscher et al teach an MRI apparatus, including a magnetic resonance imaging (MRI) system having a magnet to impress a polarizing magnetic field (figure 1, numeral 10), a plurality of gradient coils positioned about the bore of the magnet to impose a magnetic field gradient, and an RF transceiver system and an RF switch controlled by a pulse module to transmit RF signals to an RF coil assembly to acquire MR images (figure 1, numerals 11, 12, 13, 15, 16, 25, 26; columns

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4-5, lines 1-64 and 1-55); and a computer programmed to apply a plurality of RF pulse waveforms configured to control RF generation by a transmit coil array such that a result of collective RF generation across an imaging volume substantially matches a desired RF excitation profile (figure 1, numeral 20; column 5, lines 32-55; column 7, lines 43-55).

As regards to claim 17, Katscher et al teach a computer readable storage medium having a computer program stored thereon (figure 1, numeral 20, column 3, lines 33-55, column 5, lines) and representing a set of instructions that when executed by a computer causes the computer to control RF transmission by a plurality of transmit coils of a transmit coil array such that spatial and temporal variation in a composite B1 field induces a desired excitation profile upon completion of RF transmission (figure 1, numerals 11, 12, 13, 16, 20, column 5, lines 32-55, column 7, lines 43-65).

Claims 2, 8, 10-16, 18-24 are rejected as Katscher further teaches independently driven computer programmed to design RF pulses applied to linearly arranged coils to achieve and match the desired and parallel excitation with shorter time length, and further programmed to reduce aliasing and measuring changes in the magnetic field (figure 1, numerals 11, 12, 13, 16, 20; columns 1-2 lines 16-67 and 1-57; column 3, lines 41-55, column 5, lines 32-55).

Allowable Subject Matter

1. Claims 3-6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B Shrivastav whose telephone number is 571-272-2250. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 12, 2004


Brij B Shrivastav
Primary Examiner
Art Unit 2859
